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ABSTRACT

This bibliography provides an introduction to literature regarding strategies for educational improvement within the rural context. Ninety-three journal articles and books cover the following areas: (1) curriculum design and teaching methods, including research reports, case studies of improvement programs, and manuals used in implementing or evaluating changes in curriculum and teaching; (2) educational finance; (3) cooperative partnerships between schools, local businesses, and community services; (4) educating students with special needs; and (5) education and technology. Each entry consists of title, author, publisher, publication date, a brief description, and, when appropriate, call numbers from bibliographic databases such as AGRICOLA and ERIC. Also included are listings of videocassettes and periodicals related to educational improvement and the names and addresses of organizations and regional educational laboratories devoted to educational improvement. (LP)

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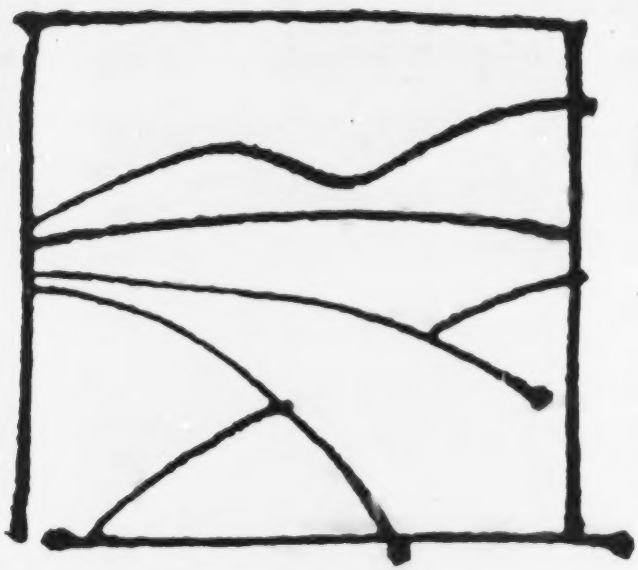

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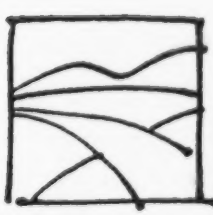
Innovative Approaches in Rural Education

Compiled by Jonathan Shimmons
Rural Information Center

Rural Information Center Publication Series, No. 22



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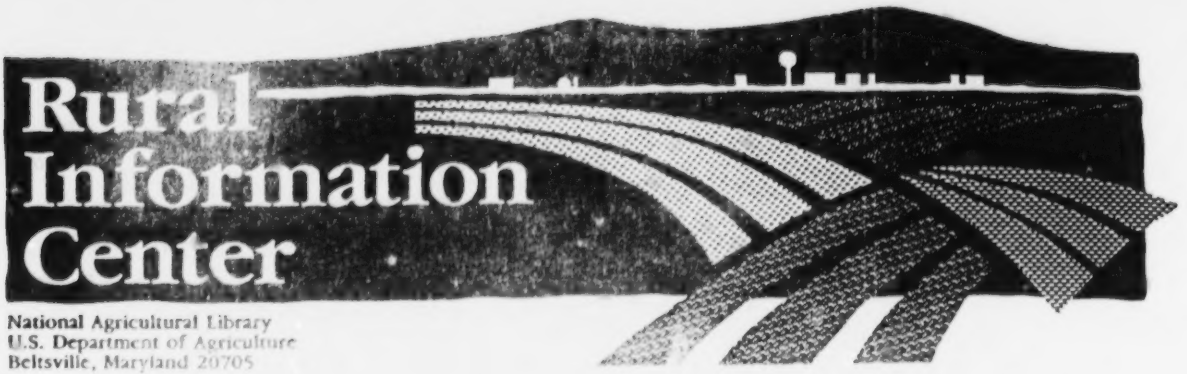

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CONTENTS

INTRODUCTION vii

CURRICULUM DESIGN/TEACHING METHODS 1

Program Models 1

Guides 4

Analysis 6

EDUCATIONAL FINANCE 9

COOPERATIVE ARRANGEMENTS 11

EDUCATING STUDENTS WITH SPECIAL NEEDS 13

EDUCATION & TECHNOLOGY 17

Distance Learning 20

VIDEOCASSETTES 23

PERIODICALS 25

ALTERNATIVE INFORMATION SOURCES 27

Organizations 27

Regional Educational Laboratories 31

DOCUMENT DELIVERY SERVICES TO INDIVIDUALS 33

ELECTRONIC MAIL ACCESS FOR INTERLIBRARY LOAN (ILL) REQUESTS 34

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INTRODUCTION

The federal report, **A Nation at Risk**, documented the declining state of public education in the United States. Since publication of that report, educators across the nation have responded with numerous ideas for educational innovation.

This publication presents an introduction to literature on some of the ideas for educational improvement – especially within a rural context. It includes articles and books which focus on new techniques and on new applications for traditional approaches.

Sources listed here are designed to serve as examples for the study of educational improvement. Most of them include bibliographies which point out additional materials for more in-depth research on specific topics.

The target audience for this bibliography is anyone interested in considering changes at the local level -- i.e., parents, teachers, or administrators. These citations refer primarily to practical models. The principal intention of this publication is to serve the everyday needs of a diverse audience seeking workable solutions to common problems in education today.

The AGRICOLA, ERIC and other bibliographic databases were used in developing this publication. Citations extracted from AGRICOLA are identified by an attached call number (e.g., NAL Call No.: HD9811.A2H4), which indicates shelf location at the National Agricultural Library. Publications available through the Educational Resouces Information Center (ERIC) are identified by their assigned ERIC Document Number (e.g., ERIC Doc. No.: ED310906). For information on availability of these publications contact ERIC/CRESS at the address or phone number listed under the Organizations section of ALTERNATIVE INFORMATION SOURCES.

CURRICULUM DESIGN/TEACHING METHODS

The following is a selection of literature on various approaches to curriculum design and teaching methods. Many of these have been successfully implemented as part of school improvement programs. Representative articles are chosen on a broad range of topics, from experimental techniques like student-directed learning and year-round schooling to traditional methods involving an emphasis on values.

This section is divided into three parts: **Program Models**, which contain case-study examples or outlines of particular improvement programs; **Guides**, which are largely manuals to be used in implementing or evaluating curriculum and teaching; and **Analysis**, which explores issues relevant to general curriculum design and teaching methods.

Program Models

1

Accommodating Change and Diversity: Multicultural Practices in Rural Schools. Jacqueline D. Spears, Jenney Penney Oliver and Sue C. Maes. Manhattan, KS: Rural Clearinghouse for Lifelong Education and Development; New York, NY: Ford Foundation, 1990. 88 p. NAL Call No.: LB1567.S632 ERIC Doc. No.: ED326362.

Changes in the demographic makeup of rural America necessitate the redefinition of educational goals and methods. This study focuses on the experiences of five rural schools in their efforts to institute curricular change in response to diversifying student populations.

2

"Bridging the Gap." Joseph J. Kroto. *Science Teacher*, Vol. 55(8), November 1988, pp. 28-29.

A bridge construction project serves as the theme for this overview of hands-on education techniques. The author describes interdisciplinary approaches to math and science education. Projects with practical applications are emphasized. The project is viewed as an example of putting book knowledge to the test, and of how separate disciplines complement each other in real-world situations.

3

A Case Study in Teacher-Centered Curriculum Development: The Process in Walpole Public Schools. Jane Kline. Walpole, MA: Walpole Public Schools, 1988. 41 p. ERIC Doc. No.: ED302891.

Illustrates teacher-centered curriculum development. Teachers in the Walpole public school system design a reading program for use in grades K-8. Describes the planning process -- course design, materials selection, establishment of standards. Author recommends specific texts and explains rationale for each selection.

4

Context and Change: A Training Program for School Improvement. H. Dickson and Joseph J. D'Amico. Philadelphia, PA: Research for Better Schools, 1987. 205 p.

5

Education in the Rural American Community: A Lifelong Process. Micahel W. Galbraith, ed. Melbourne, FL: Krieger Pub. Co., 1992. 386 p. ERIC Doc. No.: ED347012.

This book provides a conceptual and practical framework for understanding lifelong education in the context of the multifaceted rural community. The goal of the discussion is to develop educational programs involving new combinations of services and new organizational arrangements so that individuals will become resourceful, autonomous, and continuous learners within the various contexts of their community. (ERIC abstract)

6

Educational Programs That Work in Rural Settings. Rural Education Association and the National Diffusion Network. Longmont, CO: Sopris West, 1987. 63 p.

7

"Effective Schools' Policy Training for Rural School Boards." Richard P. Lipka and Herbert A. Gailey. In *Education and the Changing Rural Community: Anticipating the 21st Century.* Bellingham, WA: American Council on Rural Special Education,

National Rural and Small Schools Consortium, 1989. 24 p. ERIC Doc. No.: ED315245.

Examines an effort at curriculum revitalization in Baxter Springs, Kansas. "Effective Schools" programs involve the establishment of a director of curriculum, the creation of new school-university ties, a renewed emphasis on reading improvement, and the development of instructional leadership sessions for district administrators. Includes observations of nine rural school boards overseeing the program.

8

"Empowering Rural Communities for School Improvement." Sue Raftery. Paper presented at the 20th Annual Meeting of the Community Development Society, St. Louis, Missouri, 24-27 July, 1989. 21 p. ERIC Doc. No.: ED315264.

School and community leaders work together for school revitalization through the Appalachian Education Laboratory's Rural, Small Schools Program. Describes the experiences of four school districts taking part in the program. School/community steering committees were instituted to research and identify individual school strengths and weaknesses. Committees then work with school boards to devise improvement plans.

9

Ideas That Work in Small Schools, Grades K-6. American Agriculturalist Foundation, Inc. Dryden, NY: DMA, Davis/McDonald Associates, 1989. 20 p. ERIC Doc. No.: ED310906.

Outlines 10 promising practices employed in small and rural elementary schools in New England. Innovations include: new approaches to second-language instruction based on patterns of first language acquisition; individualized mathematics instruction; Mastery Learning techniques; nontraditional approaches to class size and course structure; and various joint activities between schools and communities. Includes list of contact persons for advice on adopting such approaches.

10

Ideas That Work in Small Schools, Grades 7-12. American Agriculturalist Foundation, Inc. Dryden, NY: DMA, Davis/McDonald Associates, 1989. 20 p. ERIC Doc. No.: ED310905.

Describes practices successful program innovations in secondary schools in New England. Innovations include: new approaches to teaching history outside the classroom; ideas for freeing principals from administrative duties so that they may concentrate more closely on instructional leadership; a program to teach resume writing and job interviewing skills through cooperation with local business; introductory courses in computer applications on information storage and retrieval, online searching and database management.

11

"Individual Education and the 4Rs." Timothy D. Evans, Raymond J. Corsini and George M. Gazda. *Educational Leadership*, Vol. 48(1), September 1990, pp. 52-56. NAL Call No.: L11.E38.

The author believes that changing times demand new approaches to education. In the past, students were more willing to accept a classroom environment based on autocratic principles, where there is order without freedom.

12

Initiating the Role of the Educational Consultant in the Rural School. Vicki M. Hobbs and Robert J. Hitt. Denver, CO: Mid-Continent Regional Educational Laboratory, Inc., 1989. 41 p.

Keeping abreast of educational research and its potential application to the local curriculum becomes nearly impossible for rural school administrators who lack sufficient time and experience in research data analysis. A cost effective and versatile alternative is hiring a rural education consultant. Taking this approach, rural schools have seen improvement in many areas, including instruction, educational technology, curriculum development, and personnel training and professional development.

13

Integrative Education: A Curriculum for the Twenty-First Century. Betty Jean Eklund Shoemaker. *OSSC Bulletin*, Vol. 33(2). Eugene, OR: Oregon School Study Council, 1989. 46 p.

Integrative education is attracting increased attention at all levels of instruction, although the concept is interpreted and implemented in various ways. Broadly defined, integrative education involves the incorporation of multi-disciplinary curricula, indicating the elimination of traditional subject divisions. Contrasts student responses to standard versus integrative approaches.

14

Proceedings from the Sixth Annual Conference on Non-Traditional and Interdisciplinary Programs. Virginia Beach, VA, April 25-27, 1988. Sally J.

Reithlingshoefer and James F. Sanford, editors. Fairfax, VA: George Mason University, 1988. 580 p. ERIC Doc. No.: ED297647.

Contains 72 papers on nontraditional and interdisciplinary programs. Touches on broad range of relevant issues, including curriculum redesign, applications of technology in the classroom, program assessment and financing change in education.

15

Rural Experiment: How Three South Dakota Schools Are Opening Doors to Their Communities...Exploring Business Partnerships, Professional Alliances, Functional Building Designs, and Expanded Learning Environments for the Information Age. Paul S. Higbee. Sturgis, SD: Black Hills Special Services Cooperative, 1990. 27 p. ERIC Doc. No.: ED327369.

Students take part in local economic planning under South Dakota's Rural School and Community Development Project. Focuses on three of 12 pilot schools. Each is different in several significant ways, including economics, history and cultural makeup of student populations. Assisted by local business and community leaders, schools experiment with various nontraditional methods of education, all involving increased student involvement in program planning and implementation.

16

"A Rural School/Community: A Case Study of a Dramatic Turnaround and Its Implications For School Improvement." R.V. Carlson. *Research in Rural Education*, Vol. 7(1), Fall 1990, pp. 23-33. NAL Call No.: LC5146.R47.

Examines necessary conditions for improving school/community interaction in areas where such relations are strained. Profiles the case of Valley View, a small Vermont community where school/community relations improved as a result of a bond issue to construct a much-needed new elementary school.

17

Schools That Work: America's Most Innovative Public Education Programs. George H. Wood. New York, NY: Dutton, 1992. 290 p. NAL Call No.: LA217.2.W66 1992.

Examines schools that "prepare active, participatory, democratic citizens."

18

The Teacher Advisor Program: An Innovative Approach to School Guidance. Robert D. Myrick, Linda S. Myrick and Charles Blair. Ann Arbor, MI: ERIC Clearinghouse on Counseling and Personnel Services, 1990. 117 p. ERIC Doc. No.: ED316791.

Teachers serve as counselors to small student groups, with whom they meet individually and as a unit, under the Teacher Advisor Program (TAP). TAP capitalizes on teachers' unique perspective on individual student needs, as determined through close association within the classroom. Author points out advantages/disadvantages of this approach, and establishes criteria for program success.

19

"The Things Money Can't Buy: South Dakota Gets More Education Than It Pays For." Patricia Summerside. *Policy Review*, (51), Winter 1990, pp. 52-54.

Students in South Dakota have a history of high academic achievement despite the state's relatively low teacher salaries and per-pupil expenditures. This article seeks the forces behind the trend, citing strong core values, stable families and close school/community relations as primary reasons.

20

Using Strategic Planning To Improve Rural Schools. Joseph J. D'Amico. Springhouse, PA: The Learning Institute; Philadelphia, PA: Research For Better Schools, Inc., 1990. 40 p. ERIC Doc. No.: ED331644.

Overview of how proper planning helps insure educational improvement. Outlines measures necessary for success through examination of a planning model employed in Pennsylvania and Delaware. Underlines importance of thorough planning and setting attainable goals.

21

Year Round Education in the Oxnard School District and Related YRE References. Oxnard, CA: Oxnard School District, 1990. 113 p. ERIC Doc. No.: ED324817.

The Oxnard School District has operated a four-track, year-round education program for more than 15 years. The author examines the program, its strengths and weaknesses. Benefits the district has enjoyed include: more efficient use of instructional materials; reduced student and teacher absenteeism; and a reduction in vandalism, burglary, and graffiti.

Guides

1

Alternatives to School District Consolidation. Bethane Berliner. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1990. 9 p.

As student populations decline creating a decrease in funding, many rural, small schools are turning to consolidation as the only reasonable alternative to closure. The movement has proven a boon for some, a bust for many. This report surveys the issue of school consolidation and its effects on student performance.

2

"Assessing the Health of Small Schools: A District Model for Educational Indicators." Barbara V. Fabert. *Journal of Rural and Small Schools*, Vol. 3(1), Fall 1988, pp. 15-18. NAL Call No.: LB1567.J68.

Proposes a method of measuring school improvement through the use of educational indicators. Explains how to go about collecting and analyzing useful data on educational effectiveness. Author argues that proper methods of evaluation lead to significant improvement in student achievement, quality of instruction and leadership.

3

Assisting Change in Education: A Training Program For School Improvement Facilitators: Participant's Manual. Ellen Rogers Saxl, Matthew B. Miles and Ann Lieberman. Alexandria, VA: Association for Supervision and Curriculum, 1989. 250 p. NAL Call No.: LB2822.8.S22.

4

"Beyond Turkeys, Santas, Snowmen, and Hearts: How to Plan Innovative Curriculum Themes." J.C. Nunnelley. *Young Children*, Vol. 46(1), November 1990, pp. 24-29. NAL Call No.: LB1140.A1J86

Provides a model for educators of young children to escape the trap of recycling the same curriculum themes each year. Instruction benefits from novel ideas, proper planning and participant involvement. Suggests working around definable themes, but allowing students enough latitude to make projects interesting.

5

A Consumer's Guide to School Improvement. Trends and Issues Series, No. 4. Geoffrey E. Mills. Eugene, OR: ERIC Clearinghouse on Educational Management, 1990. 33 p. ERIC Doc. No.: ED313800.

Addressing parents, teachers and school administrators, this overview of school improvement models provides guidance on a wide range of improvement practices. Programs answer the needs of specific types of schools in specific settings.

6

Developing Minds. Arthur L. Costa, editor. Alexandria, VA: Association for Supervision and Curriculum Development, 1991. 620 p. NAL Call No.: LB1590.3.D48 1991.

Two-volume programmed instruction packet on methods of stimulating deep thinking in elementary and secondary students. Practical resource to help initiate change, to promote the enhancement of intelligent behavior as a legitimate goal of education, and to invite critical assessment of existing school practices.

7

Guide to Alternative Education and Training. Vivian Dubrovin. New York, NY: F. Watts, 1988. 111 p.

8

Guidelines for Selecting Staff Development Providers: A Resource Book for Rural Educators. Marianne Vaughn and others. Austin, TX: Southwest Educational Development Laboratory, 1990. 124 p.

Developed especially for rural educators, this guide contains practical suggestions for selecting staff development providers. Described are more than 100 organizations that can provide training and help school districts set up staff development programs.

9

"Implementation of Promising Practices in Rural Settings: Necessary Conditions." C.C. Kane. In *Rural Education: A Changing Landscape*. Washington, D.C.: Educational Networks Division, Office of Educational Resources & Improvement, U.S. Department of Education, 1989. pp. 55-60. NAL Call No.: LC5146.R872.

The transfer of education programs has great potential but is not always successful. Each school system is unique and requires special program modification to suit its particular needs. The author

examines the planning process for proper program implementation and cautions against barriers to program adoption.

10

"Improving Leadership and Organizational Effectiveness in Rural Schools: Implications for Policymakers." H.W. Meyers. In *Rural Education: A Changing Landscape*. Washington, D.C.: Educational Networks Division, Office of Educational Research & Improvement, U.S. Department of Education, 1989. pp. 61-68. NAL Call No.: LC5146.R872.

Surveys various methods of leadership improvement in rural schools. Mentions programs and organizations such as the Mid-continent Regional Educational Laboratory which conducts workshops and in-service training in school leadership.

11

"A K/1 Class Can Work – Wonderfully." Randa Roen Nachbar. *Young Children*, Vol. 44(5), July 1989, pp. 67-71. NAL Call No.: LB1140.A1J86.

Educators are discovering the merits of multi-grade classes. This article relates the experiences of a K/1 teacher. Among the benefits of multi-grade grouping, she lists increased interaction among students, with the older ones often assisting those younger and staff familiarity with students, which enables teachers to be more responsive to student needs.

12

Making the Best of Schools: A Handbook for Parents, Teachers, and Policymakers. Jeannie Oakes and Martin Lipton. New Haven, CT: Yale University Press, 1990. 314 p.

Guide for parents and policymakers on how to cooperatively improve schools for all children by explaining effective educational practices and suggesting school policy reforms. Analyzes schools and their policies on the basis of culture, evaluation, parent involvement, reform. Explores issues affecting educators' ability to create healthy learning environments.

13

The Multigrade Classroom: A Resource Handbook for Small, Rural Schools. Bruce A. Miller. Portland, OR: Northwest Regional Educational Laboratory, 1989. 264 p.

Overview of current research on education in a multigrade setting. Intended as a guidebook for school administrators considering adopting the multigrade approach. Identifies major issues involved and suggests methods of reducing resistance to change in curriculum.

14

"Peer Tutoring as a Teaching Strategy." C.T. Fitz-Gibbon. *Educational Management and Administration*, Vol. 16(3), Fall 1988, pp. 217-229.

Pupils can learn better from each other than in some normal classrooms. This article explores current knowledge about "peer tutoring" and suggests how peer tutoring can help special groups of students and how it can be organized. (ERIC abstract)

15

A Parent's Guide to Innovative Education: Working with Teachers, Schools, and Your Children for Real Learning. Anne Wescott Dodd. Chicago, IL: Noble Press, 1992.

16

"Sustaining Improvement: The Teacher's Role in Helping School Systems Learn." William W Wayson. Paper presented at the Annual Meeting of the Ohio Reading Recovery Program, Columbus, Ohio, 5 February, 1988. 14 p. ERIC Doc. No.: ED329923.

Through the Reading Recovery program, teachers are reaching students previously thought to be barely educable. This paper reports on factors critical to program success. Among other things, teachers must adopt a resilient attitude in the face great odds. Reading Recovery is not a panacea for reaching every child, and must not be regarded as such.

17

Tips for Improving School Climate. Jim Sweeney. Arlington, VA: American Association of School Administrators, 1988. 20 p.

School climate refers to how people feel about their school. Proper school climate is essential for academic success. Described are 10 factors contributing to the improvement of school climate.

Analysis

1

"Country Schools at the Crossroads: A Five-Part Series about Ideas and Programs That Are Being Used To Improve Rural Education." Nancy Dorman-Hickson and others. *Progressive Farmer*, Vol. 104, September 1989. NAL Call No.: S1.P7.

Five-part series about ideas and programs currently being used to improve rural education. Suggestions are offered from case studies on issues such as school consolidation, creative teaching tools, funding and community-based educational improvement initiatives.

2

"From Reform to Restructuring: New Opportunities for Rural Schools." William L. Elder and Daryl Hobbs. *The Rural Sociologist*, Vol. 10(3), Summer 1990, pp. 10-13. NAL Call No.: HT401.R94.

The authors argue that educational improvement is only attainable through virtual overhaul of the present system. Reform movements mostly fail because they are based on "first-order" change, or on attempts to improve education within the basic framework of the existing system. Restructuring, on the other hand, implies "second-order" changes which seek fundamental change in system structure.

3

Keeping School in Rural America: A New Paradigm for Rural Education and Community Development. Toni Haas. n.p., 1990. 18 p. ERIC Doc. No.: ED323041.

Examines imperatives for improving rural education in a changing society. Examines the needs of rural schools. Suggests the need for a closer interface between rural education and rural economic development. Explores ways of providing more local post-high school opportunities for students in an effort to reverse the trend toward increased urbanization and rural decline.

4

Looking Ahead to the Year 2000: Proceedings of the Issues for Rural Schools Conference. Joan McRobbie and BethAnn Berliner, editors. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1989. 48 p.

Looks at emerging issues in rural education, especially restructuring and technology. Rural areas lost ground while urban areas flourished throughout the national economic boom of the 1980s. Rural areas continue to experience steady economic decline, which is reflected in the failure of its educational system. Discusses options for rural school renewal in the face of such hardship.

5

Nontraditional Education in Rural Districts. Topper Sherwood. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools; Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education, 1989. 3 p. ERIC Doc. No.: ED308054.

Rural education must be responsive to rural needs. When rural education follows the pattern set by urban schools, rural needs are not met. Examined here are a variety of nontraditional programs and strategies developed as answers to the particular needs of rural schools. Warns against the adoption of technological solutions to rural problems simply as a matter of expediency.

6

Progressive Education for the 1990s: Transforming Practice. Kathe Jervis and Carol Montag, editors. New York, NY: Teachers College Press, 1991. 203 p.

7

Public Alternative Education: Options and Choice for Today's Schools. Timothy W. Young. New York, NY: Teachers College Press, Teachers College, Columbia University, 1990. 144 p.

8

Rural Education Problems: Current Status and Future Focus. Sue Ellen Carroll. Pineville, LA: Louisiana College, 1990. 78 p. ERIC Doc. No.: ED321935.

Surveys the array of forces currently playing against rural school development. Discussed are demographic shifts, teacher shortages, financial support, and more. Author concludes that, in order to achieve improvement, rural educators must effectively plead their case to government, build on the strength of rural diversity, and implement changes intelligently. Includes bibliography.

9

"Saving Our Rural Schools." Robert Gibson. *Rural Electrification*, Vol. 49(4), January 1991, pp. 18-22. NAL Call No.: 335.8 N21.

Overview of rural education problems with highlights of reform programs recently instituted in rural school. Describes ways in which reform programs are combined with rural economic development initiatives. Author argues for more local control over schools as a means of achieving more meaningful, lasting reform.

10

Spotlight on Rural Schools in New Jersey: A Directory of Effective Programs, Practices, and Resources for Rural Educators. Mercedes Fitzmaurice. Philadelphia, PA: Research for Better Schools, Inc., 1991. 66 p. ERIC Doc. No.: ED339558.

This directory provides information about promising practices, ideas that work, strategies, and resources to improve education for all students in rural schools. It contains lists of New Jersey Rural Assistance Council members, Research for Better Schools' Rural Education Program Staff, and county superintendents with rural school districts. A map of New Jersey Rural School Districts is included. Lists of rural school districts are provided by county, in alphabetical order by school district, and in alphabetical order by superintendent. (ERIC abstract)

11

Teachers' Perspectives on What Promotes Instructional Improvement in Rural Schools. Joyce E. Killian and David M. Byrd. New Orleans, LA, 1988. 50 p. ERIC Doc. No.: ED301402.

Teachers offer opinions on incentives and obstacles to rural educational improvement. Describes the process of transforming ideas into programs. Participants report from personal notes on program implementation, expressing observations as well as student reactions to new programs.

12

"Will the Curriculum Be Unbroken?" Bob Snyder. *Appalachian Journal*, Vol. 17(4), Summer 1990, pp. 396-403.

Commentary on the **Foxfire** rural education movement. Examines the program's success, difficulties, detractors and related issues. Promotes Foxfire as a way of directly addressing the unique needs of rural schools and communities.

13

Year Round Education: A Closer Look. David Serifs. New York, NY, 1990. 22 p. ERIC Doc. No.: ED329008.

Typical school calendars are based on the thinking of early agrarian society – when children were needed as summer farm labor. Because the needs of the United States have changed, the school year format should be reconsidered. Year-round education includes any change made in the school calendar that reorganizes the standard 180 day school year, allows for staggered attendance, or extends instruction up to 240 days. Year-round education is presented here as a sound alternative to relieve overcrowding and may provide improved educational opportunities. (ERIC abstract)

EDUCATIONAL FINANCE

The national economic decline of recent years has impacted America's rural areas. In fact, while urban areas prospered, during the economic upswing of the mid- and late-1980s, rural America, in general, experienced a steady pattern of economic hardship.

Consequently, the effectiveness of rural education was undermined. Teacher shortages, a reduced tax base and increasing isolation left rural schools ill-equipped to adequately meet the needs of their clients. In response, many districts have reduced offerings or turned to district consolidation. This section contains sources addressing issues in education finance. Included are suggestions on money-saving and fundraising.

1

"101 Ways to Save Money in Small Schools." Ron Bratlie. Paper presented at the 2nd Minnesota Rural Education Association Conference, North Mankato, Minnesota, 9-10 April, 1986. 9 p. ERIC Doc. No.: ED269190.

Provides tips on moneysaving measures for rural school administrators. Topics covered include: facilities planning, efficient time management techniques, salary negotiations, utilizing teacher/administrators and volunteers, retirement issues, and more. Also includes suggestions on various ways of fundraising for school improvement.

2

Allocating Resources in Rural and Small Schools. Small Schools Network Information Exchange, (9). Andover, MA: Regional Laboratory for Educational Improvement of the Northeast & Islands, 1990. 155 p.

Collection of 48 articles addressing various issues of resource allocation in rural and small schools. Topics covered include: potential new revenue sources, cooperation and consolidation and public relations strategies to gain support for school improvement.

3

"An Alternative to the Traditional Funding of Small, Rural Schools." David H. Monk. In *Rural Education: A Changing Landscape*. Washington, D.C.: Educational Networks Division, Office of Education Research & Improvement, 1989, pp. 31-36. NAL Call No.: LC5146.R872.

Overview of policy issues regarding the present and expected future course of funding for small and rural schools. Divided into three sections: (1) the traditional approach to financing rural schools and its associated difficulties (2) the new approach, which expresses the belief that rural, small schools are not inherently inefficient, and (3) a final section comparing and contrasting the two approaches, and predicting a course for the financial future of rural schools.

4

Efficient Financial Management in Rural Schools: Common Problems and Solutions for the Field. Deborah Inman-Freitas. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools, 1991. 3 pages. ERIC Doc. No.: ED335206.

Reports the results of a national survey of rural school administrators on common financial problems experienced in small and remote districts. Contains suggested strategies for overcoming financial problems, including the adoption of a four-day school week and involvement in inter-district collaborative activities.

5

"Establishing Legislative Support for the Funding of Technology in Rural Schools." William A. Clauss and Frank Wittmer. *Rural Special Education Quarterly*, Vol. 9(4), Winter 1989, pp. 25-28. NAL Call No.: LC5146.R87.

Outlines ways of obtaining legislative support and financial backing for educational technologies in small rural schools. Gives tips on how to design effective funding proposals that attract legislators' attention.

6

Fiscal Policy Issues and School Reform. Faith E. Crampton. Eugene, OR: ERIC Clearinghouse on Educational Management; Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education, 1990. 4 p. ERIC Doc. No.: ED321342.

School improvement is virtually impossible without adequate financial support. New programs, research and instructional materials all require money, which many rural districts simply cannot spare. Schools can successfully meet these challenges by practicing sound fiscal management and placing an emphasis on cost-effectiveness and accountability.

7

"How Strong Medicine Saved Our Schools from Financial Ruin." Peter Corona. *Executive Educator*, Vol. 11(9), September 1989, pp. 20-21.

Tells the story of the Emery Unified School District (Emeryville, CA), which teetered on the brink of bankruptcy. The district persevered, but not without great effort. School and community officials took a team approach, setting a course of strict financial management. Cost-cutting measures eventually reduced debt and saved the district from financial ruin.

8

"Lease/Purchase: A Viable Alternative for Financing Schools." Denise Demers. *School Business Affairs*, Vol. 55(1), January 1989, pp. 21-27.

School districts on tight budgets are launching lease-purchase options to financing educational improvement. Examines positive and negative implications of lease-purchase financing. Discusses traditional tax-exempt bond financing.

9

The Local Education Fund: A Resource Guide. Pittsburgh, PA: Public Education Fund, 1988. 49 p.

The Local Education Fund (LEF) is an alternative method of providing financial support for educational improvement. LEFs are local nonprofit entities designed to help foster supportive relationships between the private sector and public schools. This guide provides advice on how to establish and administer an LEF.

10

Making Sense of School Budgets: A Citizen's Guide to Local Public Education Spending. Susan Perkins Weston, W. Gary Harmer and James W. Guthrie. U.S. Department of Education, Office of Educational Research and Improvement. Washington, DC: Government Printing Office, 1989. 53 p. SuDocs. No.: 065-000-00382-1.

Citizens' guide to understanding how tax money is used in local public schools. Contains advice on where to find information on school spending – district publications and records, for example. Intended to help average taxpayer sort through confusing terminology of budget proposals. Also contains advice on how to go about registering disapproval of school spending.

11

Managing Smallness: Promising Fiscal Practices for Rural School District Administrators. Deborah Inman Freitas. Charleston, WV: ERIC/CRESS, 1992. 74 p.

12

"School Finance in the 90's." Allan C. Ornstein. *The American School Board Journal*, Vol. 177(1), January 1990, pp. 36-39. NAL Call No.: LB2831.A4 F&N.

Highlights major fiscal trends expected to occupy the attention of school boards in the near future. Topics covered include: economizing and learning to do without; coping with demographic changes, preserving/repairing aging building; and safeguarding against environmental hazards.

COOPERATIVE ARRANGEMENTS

An idea that has surfaced in recent years as a solution to the challenges for rural schooling is educational cooperatives. Under such arrangements schools form partnerships with local businesses, services or other schools.

Unlike consolidation, school-to-school partnerships involve an exchange of students, instructors and resources between institutions at different levels of schooling (e.g., colleges with high schools). School-business and school-service partnerships are similar and often take the form of professional internships, providing real-world working experience for students. School-business partnerships may also involve monetary support for school improvement.

The following is a listing of some of the literature on various types of educational cooperatives.

1

American Business and the Public School: Case Studies of Corporate Involvement in Public Education. Marsha Levine and Roberta Trachtman, editors. New York, NY: Teachers College Press, 1988. 278 p.

Written by program participants, these case studies reflect personal perspectives on public/private partnerships for education improvement. Studies reveal the following: that partnerships differ by region; that collaborations tend to change over time; that not all such programs do or should have similar goals; that both corporations and schools regard partnerships very seriously; etc.

2

Cooperative Education: Resource Guide and Directory. Washington, DC: American Institute of Cooperation, 1989. 67 p.

Lists over 300 cooperative education courses, training programs and materials currently being used in schools across the nation. Each entry contains information on producers, sponsors or points of contact, program title, format and a brief description of its content.

3

"Educational Reform Agenda and Partnerships." Dean C. Corrigan and William H. Mobley. Washington, DC, 1990. 31 p. ERIC Doc. No.: ED325037.

Major factors contributing to the crisis in United States education are summarized, including poverty, changes in the American family, child abuse, changes in the ethnic composition of schools, increasing global economic competition, decline in traditional student performance measures and teacher shortages. The educational reform movement is discussed.

4

"Evaluating the Benefits of a Computer Based Telecommunication Network: Telementoring and Teletraining for Educators in Rural Areas." Robbie M. Kendall. *Journal of Research in Rural Education*, Vol. 8 (1), Winter 1992, pp. 41-46. ERIC Doc. No.: EJ445003.

Describes an inservice teacher training program for educators in early childhood special education in rural South Carolina using telecommunications, telementoring, and teletraining. The program evaluation shows significant improvements in participants' self-reported competency in using computers, understanding research journals, and using research information. (ERIC abstract)

5

"High School Students in College Courses: Three Programs." Arthur Richard Greenberg. *New Directions for Community Colleges,* Vol. 16(3), Fall 1988, pp. 69-84.

Partnerships between high schools and colleges have traditionally been designed only for gifted students. This article emphasizes a need for cooperative programs involving average students, who often receive the greatest benefit from such arrangements.

6

Linking Schools & Community Services: A Practical Guide. Estelle R. Robinson and Aleta You Mastny. New Brunswick, NJ: Center For Community Education, School of Social Work, Rutgers, State University of New Jersey, 1989. 74 p.

Handbook for involving students in social service activities. Written for people who are interested in initiating collaborations, linkages and networks. Proposes a model for launching school/social service

cooperatives based on lessons learned from two pilot projects.

7

"Model for Implementing School Improvement Practices in Rural and Small Schools with a School-University Partnership." Billy E. Askins and Jean Schwisow. *Journal of Rural and Small Schools*, Vol. 3(2), Winter 1989, pp. 36-42. NAL Call No.: LB1567.J68.

Practical guide to setting up partnership programs between high schools and universities. Establishes conditions necessary for success by focusing on a partnership between Texas Tech University and a local high school. Presents program goals and steps taken by both institutions to insure success.

8

"Rural Educational Collaboratives: An Economic and Programmatic Viewpoint." R. Fletcher, Jack T. Cole. *Journal of Rural and Small Schools*, Vol. 5 (1) 1992, pp. 30-34. ERIC Doc. No.: EJ438274.

Describes a three-tiered educational system where local education agencies (LEAs) organize into educational collaboratives responsible to the state education agency (SEA). Synthesizes the findings of current studies that address the economic and programmatic variables related to the operation of effective educational collaboratives in rural areas. (ERIC abstract)

9

Rural School District Cooperatives. Andy Sommer. Portland, OR: Northwest Regional Educational Laboratory, 1990. 47 p.

As an alternative to consolidation, rural schools make up for financial inadequacies through inter-district resource sharing. Such arrangements allow schools to remain open despite low student enrollment and budget limitations. Inter-district cooperatives often serve as catalysts for reinvigorating teachers and strengthening curriculum, as educators exchange ideas and information.

10

Partnerships for Improving Schools. Byrd L. Jones and Robert W. Maloy. *Contributions to the Study of Education*, (24). New York, NY: Greenwood Press, 1988. 179 p. NAL Call No.: LB2822.82.J66.

Surveys the broad range of educational partnerships, involving business, community organizations and educational institutions of all types. The authors believe cooperative arrangements between schools and outside organizations hold tremendous potential for both.

11

School Partnerships: A Handbook for School and Community Leaders. Arlene L. Gardner, editor. New Brunswick, NJ: Public Responsibility For Educational Success, The State University of New Jersey, Rutgers, 1990. 304 p.

Step-by-step instruction on the development of successful partnerships between schools and the broader community. Points out essential measures that must be taken, as well as pitfalls to avoid in instituting cooperative arrangements. Includes descriptions of 500 examples of collaborative efforts currently taking place across the country.

12

"Unusual Washington State Clearinghouse Develops Teaching and Learning Innovations for Colleges." Peter Monaghan. *Chronicle of Higher Education*, Vol. 35(39), June 7 1989, pp. A11, 13. NAL Call No.: LB2300.C5.

Educators in Washington State's post-secondary institutions work together to develop innovative teaching and learning programs. Schools contract with the consortium's small central clearinghouse, which serves as a think tank for educational innovation.

EDUCATING STUDENTS WITH SPECIAL NEEDS

Part of the process of redefining rural education is the continuing effort to adequately serve students with special needs. By definition, special needs students are those requiring unique care and attention in order to fully benefit from education. Special needs students include the gifted, the mentally and physically impaired, at-risk students and returning adults.

In the past, some rural families found it necessary to move to urban areas in order to obtain adequate educational services for their special needs child. Even now, in remote areas, parents with handicapped children may have to transport their children long distances for services.

This section contains references to literature on methods of serving the special needs of these students within rural communities.

1

Building Academically Strong Gifted Programs in Rural Schools. Anna Luhman and Ronald Fundis. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools, 1989. 3 p. ERIC Doc. No.: ED308060.

Presents perspectives on educating gifted students in rural settings, where teachers are often limited by materials shortages and budgetary constraints. In certain ways, however, rural schools are best suited to meeting gifted students' needs.

2

"Children with Disabilities in Rural Areas: The Critical Role of the Special Education Teacher in Promoting Independence." Quentin W. Smith, and others. *Rural Special Education Quarterly*, Vol.11 (1) 1992, pp. 24-30. ERIC Doc. No.: EJ444984.

Disabled children in rural areas face special challenges in preparing for independence in communities where services are inadequate. Rural special education teachers must become promoters of independent living for disabled young people. Possibilities are outlined for teacher interventions with individuals and families and advocacy efforts. (ERIC abstract)

3

"Considering Regular Classroom Options for Students with Severe Disabilities in Rural Areas." Lucille A. Zeph. *Rural Special Education Quarterly*, Vol. 10 (4), 1992, pp. 5-9. ERIC Doc. No.: EJ436525.

Describes six rural service delivery models that place severely disabled students in regular classrooms: team teaching, pairing regular and special education teachers; parallel teaching by special educators within regular classrooms; regular classroom base with in-class or separate tutorial; regular classroom placement with dual-certified teacher or support services. (ERIC abstract)

4

"Community Schools: New Institutional Arrangements for Preventing High-Risk Behavior." Joy G. Dryfoos. *Family Life Educator*, Vol. 8(4), Summer 1990, pp. 4-9. NAL Call No.: HQ10.F35.

Suggests a multi-pronged approach for improving educational offerings to high-risk students. Incorporation of people and institutions outside the school system is key to program improvement. Describes six elements crucial to the success of such ventures, including individualized attention, parent and business involvement.

5

"Cooperative Education for Homebound Students: An Innovation for the Physically Challenged." Abraham Axelrud. *Journal of Education for Business*, Vol. 65(3), December 1989, pp. 134-136.

Education of the physically challenged gets high priority at Queensborough Community College in New York City. The school offers a special program whereby such students are placed, according to career objective, in cooperative arrangement with local business, gaining real work experience while challenging society's misconceptions of the handicapped.

6

"Gifted, Disaffected, Disruptive Youths and the Alternative High School." Janet K. Osborne and Deborah A. Byrnes. *The Gifted Child Today*, Vol. 13(3), May-June 1990, pp. 45-48.

Presents case studies of eight gifted students, each of whom was expelled or had dropped out of school as a result of emotional/behavioral problems. Many were found suffering from drug and/or alcohol problems.

Relates the experience of attempting to remediate such students through nontraditional programs in alternative rural schools.

7

"Going Creative: Becoming Free." Nigel Bakker. *Gifted Education International*, Vol. 6(3), 1990, pp. 196-200.

Examines damage to young children's creativity by school systems that emphasize left-brain activity, bureaucracy, and the maintenance of the status quo. Proposed as an alternative is Huston Smith's fourfold education scheme: subjective education; education for surprise; education for surrender; and education for words. (ERIC abstract)

8

"Guidance and Counseling in Rural Communities for Students with Special Needs: Increasing the Effectiveness of Educational Programs." Linda H. Parrish and Patricia S. Lynch. *Journal for Vocational Special Needs Education*, Vol. 12(2), Winter 1990, pp. 13-16.

School counseling and guidance services are increasingly recognized as integral to curriculum, although limited funding prohibits their improvement in many rural schools. A solution may be found in the networking concept. Neighboring school districts pool resources in order to provide more effective student counseling.

9

"An Integrative Model for Educating Very Able Students in Rural School Districts." Peggy Dettmer and Jean M. Lane. *Educational Considerations*, Vol. 17(1), Fall 1989, pp. 36-39.

Gifted students require a less restrictive environment in order to fully realize their intellectual potential. Teachers should seek to allow students more classroom autonomy. In doing so, teachers should see themselves more as student consultants than their educators.

10

A K-12 Approach: Cost-Effective "At Risk" Program in a Rural Setting. Julian M. Kite. Paper presented at the Students at Risk Conference (4th, Lake of the Ozarks, MO, March 5-6, 1991). 1991. 11 p. ERIC Doc. No.: ED339554.

This paper describes programs for high risk students in the St. James R-1 (rural) School District in Missouri. The participants, staff, procedures, and effectiveness are briefly discussed for each program. A variety of programs for elementary and secondary level programs are discussed.

11

Overcoming Risk: An Annotated Bibliography of Publications Developed by ERIC Clearinghouses. Wendy Schwartz and Craig Howley, editors. Charleston, WV: ERIC/CRESS, Appalachian Educational Laboratory; New York, NY: ERIC/CUE, Teachers College, Columbia University, 1991. 104 p. ERIC Doc. No.: ED330510.

Contains two essays and an annotated bibliography of publications about risk. The first essay, "Who Is at Risk? Definitions, Demographics, and Decisions," categorizes personal, family, and environmental factors that may place children at risk. The author recommends reforms to mitigate the effects of risk and forecasts a growth of the at-risk population. The second essay, "On Being at Risk," presents a working definition of risk ("risk of failure in life") and discusses the way in which individual differences influence particular students' responses to risk. Describes initial efforts at constructing a scale or index to identify risk. (ERIC abstract)

12

Project TEEM Outreach: Transition into the Elementary Education Mainstream throughout Rural Vermont. Final Report. State-Wide Outreach Project: Handicapped Children's Early Education Program Demonstration Projects. Wayne Fox, Jane Ross Allen. Burlington, VT: Vermont University, Center for Developmental Disabilities, 1991. 76 p. ERIC Doc. No.: ED341202.

This final report describes: (1) a model designed to help the transition of young children with special needs from early childhood programs into regular kindergarten and other regular education environments; and (2) the impact of TEEM (Transition into the Elementary Education Mainstream) Outreach in disseminating and replicating the model throughout Vermont.

13

Reaching Our Potential: Rural Education in the 90s. Conference Proceedings. Rural Education Symposium (Nashville, Tennessee, March 17-20, 1991). Ed Mun Ho Lee. Bellingham, WA: Western Washington

Univ., Bellingham. National Rural Development Institute, 1991. 916 p. ERIC Doc. No.: ED342521.

This proceedings contains approximately 92 presentations focusing on rural education and rural special education. Topics include: meeting the needs of handicapped and disabled students in rural areas; education and inservice training of special education teachers; teacher cooperation models; higher education of at-risk students; rural teacher education; job satisfaction and burnout among rural teachers; transition from school to work for learning disabled and other special education students and more. (ERIC abstract)

14

"Rural 'At-Risk' Students: Directions for Policy and Intervention." Doris Helge. *Rural Special Education Quarterly*, Vol. 10(1), Spring 1989, pp. 3-16. NAL Call No.: LC5146.R87.

Strives toward a definition of "risk," examines behavior indicating self-destructive tendencies among rural students and proposes methods of educational intervention. Includes excerpts from case studies of at-risk youth. Promotes increased family/community involvement and new approaches aimed at raising self-esteem.

15

The Rural Education Agenda: Education for Individuals with Disabilities. Toni Haas and Eula Boelke. Aurora, CO: Mid-Continent Regional Educational Laboratory, 1990. 7 p.

Individuals with disabilities depend on access to quality services and employment opportunities. Distance and isolation, which typify rural areas, directly impact these issues. The Education for All Handicapped Children Act establishes that public education is responsible for providing education for all children and requires substantial and system-wide changes in providing such education. This article reviews the impact these changes have had on rural and small schools, particularly regarding budgeting.

16

Rural, Exceptional, At Risk. Exceptional Children at Risk: CEC Mini-Library. Doris Helge. Reston, VA: Council for Exceptional Children; ERIC Clearinghouse on Handicapped and Gifted Children, 1991. 59 p. ERIC Doc. No.: ED339173.

This booklet examines the unique difficulties of delivering education services to at-risk children and youth with exceptionalities who live in rural areas. Includes 30 references and suggested resources including examples of successful service delivery models. (ERIC abstract)

17

"Rural Special Education Placement: Stability and Change." Douglas W. Halgren, Harvey F.Clarizio. *Journal of Research in Rural Education*, Vol. 8 (1), Winter 1992, pp. 89-96. ERIC Doc. No.: EJ445007.

Studied the stability of special education services in rural areas by examining the records of 654 students in 10 school districts over a 3-year period. More than one of five students were terminated and about one in six were reclassified. Speech-language-impaired students were most likely to change, whereas severely mentally impaired were least likely to change. (ERIC abstract)

18

"Serving the Gifted in Rural Areas." *Roeper Review*, Vol. 11(4), May 1989, pp. 195-208.

Five papers are presented on serving rural gifted students, discussing: advanced academic courses offered through telecommunications; an electronic bulletin board and videotape exchange network; staff development and networking through telecommunications; acceleration strategies in elementary schools; and rural and urban gifted high-school students' differences on locus of control measures. (ERIC abstract)

19

"Serving Language Minority and Multi-Cultural Special Populations in Rural Areas. A Special Challenge." Virginia K. Posey and Kathryn Hollenback. *Journal for Vocational Special Needs Education*, Vol. 12(2), Winter 1990, pp. 23-27.

Today's rural school must adapt itself to the demands of a more culturally diverse student population. Rural educators are seeing increased success with language minority and special education students as more adequate and appropriate programs emerge. Some of the more successful programs feature better academic and vocational assessment, career guidance and instructional support.

20

"Special Education: An Administrative Dilemma." Nora Hutto, Bonnie Page. *Journal of Rural and Small*

Schools, Vol. 4 (3), Winter 1991, pp. 43-46. ERIC Doc. No.: EJ431753.

Rural school districts frequently lack administrators with the training needed to manage special education programs. One solution is a collaborative, site-based administrative team of regular and special educators, parents, and community members. Team training should focus on group processes, documentation, comprehensive service plans, and program implementation and evaluation. (ERIC abstract)

21

Special Education in Rural Schools: A Resource Notebook on Rural Schools. Anne Turnbaugh Lockwood. Madison, WI: National Center for Effective Schools Research and Development, 1991. 655 p. ERIC Doc. No.: ED344725.

This resource book covers a variety of topics on special education and rural education research and practice. The document is a collection of articles and resource listings. The articles are categorized into: (1) general (effective schools, special education, rural schools); (2) recruiting, retaining and training teachers; (3) financing rural special education; (4) policy and law; and (5) appropriate technology. (ERIC abstract)

22

Strategies for Teaching Students with Learning and Behavior Problems. Candace S. Bos and Sharon Vaughn. Boston, MA: Allyn and Bacon, 1988. 419 p. NAL Call No.: LC4705.B67.

Practical guide to methods of educating children and adolescents who have difficulty learning and interacting appropriately in school. Covers problems that may be encountered and numerous approaches that may be employed. Provides advice on program implementation, as well as ideas regarding classroom management and working with parents and professionals.

23

Using the Arts as an Educational Model For High-Risk Individuals. Edith W. King and Sharon D. La Pierre, editors. Denver, CO: Denver University School of Art, 1990. 52 p.

This report is a collection of six papers on alternative learning and teaching methods for high-risk learners at all grade levels. Students who fail or lose interest in core content areas may excel at art, which requires qualities not addressed in other courses. Educators must work to foster the proper environment for reaching such students before they leave school. Includes program models and ideas on motivating at-risk students to create.

EDUCATION & TECHNOLOGY

The marriage of education and technology continues to be a major catalyst for educational improvement. The presence of high-tech equipment is ubiquitous in the modern urban classroom environment, and nearly all literature published today on educational improvement contains at least passing reference to technology and its role in education.

The following is a list of articles and books which contain information on technology and its many applications for learning. It should be noted that, due to the ever-changing nature of technology, this list is to be considered by no means the latest word on state-of-the-art educational technology.

1

"CD-ROM in General Education." Sandra Kay Helsel. *Optical Information Systems,* Vol. 9(1), January-February 1989, pp. 30-37.NAL Call No.: TK5105.V53.

Explores the introduction of new educational technologies and offers lessons learned for implementing CD-ROM in the classroom. Contains discussion of related topics, including consideration of the traditional classroom and the changing role of teachers; inservice teacher education; experiences with educational radio and television and interactive videodisc.

2

Change in Public Education: A Technological Perspective. Thomas V. Gillman. *Trends & Issues,* (1). Eugene, OR: ERIC Clearinghouse on Educational Management; Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education, 1989. 32 p. ERIC Doc. No.: ED302940.

Synthesis of recent research on technology and its impact on education. Explains a rationale for planning and feedback in the development of technology-assisted programs. Author supports the full implementation of computer literacy training at all levels of instruction.

3

"Communications Satellites: A Rural Response to the Tyranny of Distance." Gregory Jordahl. *Educational Technology*, Vol. 29(2), February 1989, pp. 34-38. NAL Call No.: LB1043.E33.

Overview of several current satellite-based instructional systems, assessing their potential role in improving rural education. Rural school districts are extending their reach via satellite in effort to affect significant and sustained improvements in the quality of their curricula.

4

"Computer-Supported Co-operative Learning Systems: Interactive Group Technologies and Open Learning." Dick Davies. *Programmed Learning and Educational Technology*, Vol. 25(3), August 1988, pp. 205-215.

Reviews various interactive technologies used in open learning situations. Pays particular attention to the concept of computer supported cooperative work, involving the use of computer-based message systems. Examines the effects of such approaches on open learning.

5

Education for the New Technologies. World Yearbook of Education - 1988. Duncan Harris, editor. London: Kogan Page, 1988. 330 p. NAL Call No.: L900.W67 1988.

Thorough coverage of educating with technology. Text divided into five major sections: (1) assessing the basis and needs for education for new technologies, (2) national perspectives on trends in educational technology, (3) outlining specific initiatives for educating with technology, (4) questions regarding technology in education, and (5) bibliography, biographical notes and index.

6

Educational Technology: Kindergarten through Twelfth Grade. Kurt A. Steinhaus. Sante Fe, NM: New Mexico State Department of Education, 1991. 51 p. ERIC Doc. No.: ED343577.

This report presents the findings and conclusions of a study of educational technology in New Mexico schools. Designed to provide baseline information to the New Mexico Education Technology Planning Committee, the results of the study will also be used to help make statewide planning decisions concerning educational technology.

7

"The Electronic School: Innovative Uses of Technology in Education." *Executive Educator*, Vol. 11(9), September 1989, pp. A1-A32.

Up-to-the-minute technology is making United States schools more productive. Technology is presenting new choices in equipment and methods for problem solving and expanding education. Eleven separate articles are included. (ERIC abstract)

8

"Information Technologies in Support of Teaching and Learning." Kenneth M. King. *Higher Education Management*, Vol. 2(3), 1990, pp. 294-298.

Analysis of information technology's role in higher education looks at pressures to use technology, the slow pace of adoption, current directions in technological advancement, and its impact on institutional policy and resource requirements. Its impact on teaching and learning without a new paradigm for instruction is seen as limited. (ERIC abstract)

9

Instructional Media and the New Technologies of Instruction. Robert Heinich, Michael Molenda and James D. Russell. 3rd edition. New York, NY: Macmillan, 1989. 456 p. NAL Call No.: LB1028.3.H4-1989.

Intended to provide exhaustive, up-to-date coverage on the subject of educational technologies. Includes everything from discussion of issues involved to blueprints of technology-based programs and the hardware itself. Text is in simple laymen's terms for the uninitiated.

10

Intelligent Tutoring Systems: Evolutions in Design. Hugh Burns, James W. Parlett and Carol Luckhardt Redfield, editors. Hillsdale, NJ: Lawrence Erlbaum Associates, 1991. 297 p. NAL Call No.: LB1028.5.15.

Survey of computer-based instruction systems and methods. Author supports intelligent tutoring systems because they afford students more individualized instruction based on particular individual needs, and allow students more autonomy and self-regulation in the learning process.

11

Interactive Optical Technologies in Education and Training: Markets and Trends. Sandra K. Helsel. Westport, CT: Meckler, 1990. 136 p. NAL Call No.: HD9811.A2H4.

Interactive optical technologies offer new possibilities for rural education. Students living in rural areas today have access to entire libraries of information through optical systems. Author attempts to provide an integrated description of all interactive optical systems currently available.

12

Learning Technology Resource Guide. Lisa Crooks Zugner, editor. Syracuse, NY: ERIC Clearinghouse on Information Resources, 1989. 69 p.

Presents a rundown of electronic technologies resource organizations, offering a broad range of information about selected projects, course materials, software, program reports, educational technologies institutions and clearinghouse activities. Intended for school administrators and decisionmakers seeking school improvement through learning technologies.

13

"The Non-school Learning Environment: ECR." John A. Scigliano and others. *Technological Horizons in Education*, Vol. 16(6), February 1989, pp. 63-67.

Describes a system which emulates a face-to-face classroom where groups of students can participate online using standard low-cost personal computer hardware at the student's location. Provides an overview, rationale, assumptions, design problems,and limitations of the program. Discusses alternative uses and evaluation of the technique. (ERIC abstract)

14

Overcoming Resistance to the Use of Instructional Computing in Higher Education. Phillip B. Waldrop and Thomas M. Adams, II. n.p., 1988. 30 p. ERIC Doc. No.: ED296656.

Examines reasons for resistance and proposes ways of confronting and overcoming student reluctance to using new technologies. Studies show student/teacher resistance prevents proper implementation of educational technology. Suggests methods of easing the transition to a more technology-based curriculum.

15

"Rural Education." Ed Ullik Rouk. *R & D Preview*. Vol. 6 (1), Oct. 1991. 13 p. ERIC Doc. No.: ED343738.

Covers topics such as science, reading, cooperatives, distance learning, leadership, and more. The article provides a list of names, locations, and directors of regional laboratories.

16

"School Reform and Restructuring: Does Performance Technology Have a Role?" Sharon A. Shrock. *Performance Improvement Quarterly*, Vol. 3(4), 1990, pp. 12-33.

Consideration of possible applications of technology from a school reform perspective. Suggests that technology could augment the process of planning for school reform by helping reduce uncertainties. Divides reform process into series of sub-processes, including job and curriculum design, instituting evaluation systems, and implementing technology. Includes 60 references.

17

"Teaching with Technology." Jeff Meade and others. *Teacher Magazine*, Vol. 2(4), January 1991, pp. 29-57.

Special section on teaching with technology offers eight articles on how to get over technophobia, how to overcome obstacles, and "do-it-yourself," teacher training, what teachers are currently doing with technology, how one school uses technology, whether technology works, how to buy a computer, and available resources. (ERIC abstract)

18

Technology and Collaboration: Strategies for Improving Educational Delivery Systems in Rural Schools. George Mann and others. Fayetteville, AK: Southern Futures Society, 1991. 9 p.

Results of a joint venture between a public school system and East Central University in Ada, Oklahoma. A computerized evaluation program was installed to monitor student development and understanding of course material.

19

Technology in Today's Schools. Cynthia Warger, editor. Alexandria, VA: Association for Supervision and Curriculum Development, 1990. 199 p. NAL Call No.: LB1028.3.T427.

Describes approaches practitioners have found successful in using technology as a tool to improve learning. Covers general issues in integrating technology into school programs, describes instructional approaches using systems such as interactive video, computer-assisted instruction and online databases. Also addresses needs of special groups including at-risk youth with respect to technology.

20

Telecommunications in the Classroom. Chris Clark, Barbara Kurshan and Sharon Yoder. Palo Alto, CA: Computer Learning Foundation; Eugene, OR: International Society for Technology in Education, 1989. 79 p.

Practical guide for educators on using telecommunications in the classroom. Provides an overview of available resources and various applications of technologies. Contains comprehensive list of lesson plans for use at all grade levels, including suggestions on methods of program assessment.

21

"Theme: The Electronic Classroom." Bruce Herz, and others. *The Agricultural Education Magazine*, Vol. 60(9), March 1988, pp. 5-15. NAL Call No.: 275.8.Ag8.

Consists of seven articles on the use of electronics in vocational agricultural education. Topics include (1) the AgEd Network, (2) computer simulations, (3) video simulation, (4)classroom equipment, (4) online information systems, (5) expert systems, and (6) computer networking in California. (ERIC abstract)

22

"TV 101: Good Broadcast Journalism for the Classroom?" James M. Haney. Paper presented at the 75th Annual Meeting of the Speech Communication Association, San Francisco, California, 25-30 March, 1989. 23 p. ERIC Doc. No.: ED313750.

Author looks at different sides of issues surrounding the controversy over electronic educational supplements Channel One and CNN Newsroom. Both feature daily television-delivered news programming aimed at improving students' understanding of current events. Concern has risen over reporting bias and the potentially corrupting influence of commercial advertisements.

23

"Using Microcomputers in Education: Assessment of Three Teaching Strategies." Robert J. Birkenholtz, Bob R. Stewart, Michael J. McCaskey, Thomas D. Ogle and Richard E. Linhardt. *Journal of Agricultural Education*, Vol. 30(1), Spring 1989, pp. 51-59. NAL Call No.: S530.A4.

Focuses on the role of microcomputers as instructional tools in secondary agricultural education. Authors conclude that microcomputers may be used to augment and even replace portions of traditional instruction. Authors caution, however, against nonprogressive uses of technology.

24

Vision: TEST (Technologically Enriched Schools of Tomorrow). Final Report: Recommendations for American Educational Decision Makers. Ludwig Braun. Eugene, OR: International Society for Technology in Education, 1990. 49 p.

Reviews a project carried out by the International Society for Technology in Education (ISTE) to assess technology's emerging role in education. The study includes on-site interviews with educators and students currently participating in programs using learning technologies. Students were tested on comprehension of technology-delivered instruction. Results were analyzed and recommendations for program improvements were made.

Distance Learning

25

Audiographics Distance Learning: A Resource Handbook. Dean H. Bradshaw and Karen Desser. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1990. 74 p.

Audiographics is emerging as one of the most effective and cost-efficient interactive distance learning systems available. The process involves the combined use of technologies for voice transmission, computer networking and telefax transfer of materials. This handbook is a step-by-step guide to developing and implementing an audiographics program.

26

"The Crisis of Distance Learning – A Dangerous Opportunity." Abigail L. Hughes. Paper presented at the *Annual Meeting of the American Educational* Research Association, New Orleans, Louisiana, 5-9 April, 1988. 21 p. ERIC Doc. No.: ED304128.

Presents analysis of data on existing interactive education programs. Outlines common features of distance learning strategies, distinguishing between approaches tailored to different age groups. Focuses on pote atial of technology to augment and improve, but not replace, traditional means of educating elementary and secondary students.

27

The Distance Education Handbook: An Administrator's Guide for Rural and Remote Schools. Bruce O. Barker. Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools, 1992. 65 p. NAL Call No.: LC5146.B37 1992.

Distance education will likely have increasing impact on rural schools, where shortages in qualified staff and low student enrollment severely limit course offerings. Presents an examples of various ways telecommunications technology is presently being used in schools across the country.

28

"Distance Education in Rural Schools: Advantages and Disadvantages." Bruce A. Barker. *Rural Educator*, Vol. 12(1), Fall 1990, pp. 4-7.

Gives even-handed coverage to issues regarding distance education. Examines both advantages and disadvantages posed by long distance instruction. Author applauds technology for making quality instruction available to isolated areas, but concedes serious drawbacks due to a lack of direct student/teacher interface.

29

Distance Education Systems. Sergio Elliot. *FAO Economic and Social Development Paper*, (67). Rome: Food and Agricultural Organization of the United Nations, 1990. 73 p. NAL Call No.: HD1417.F64 v.67.

Presents and explains some of the major aspects of distance education. Emphasizes aspects which could be useful in education and training programs leading to rural development. Designed for use by distance education program planners, administrators, teachers, researchers and students.

30

Electronic Links for Learning. Vivian M. Horner and Linda G. Roberts, editors. *Annals of the American Academy of Political and Social Science*, Vol. 514. Newbury Park, CA: Sage Publications, March 1991. 223 p. NAL Call No.: 280.9 Am34 v.514.

Presents researchers' views on broad range of concerns within the scope of distance learning. Assesses specific programs, including those involving schools and industry. Considers the ways educational technologies are changing students' attitudes toward learning.

31

"Establishing Rural ITFS Distance Education Programs: The California State University, Fresno Experience." Russ A. Hart, and others. Paper presented at the Annual Conference of the Association for Educational Communications and Technology (Washington, DC, February 5-9, 1992). 19 p. ERIC Doc. No.: ED346846.

Describes the planning and implementation of a rural instructional television fixed service (ITFS) distance education program at California State University-Fresno. Three goals of the program are: telecommunications networking, management infrastructure, and faculty development.

32

"Open Learning and Technology-Based Learning Materials." Vivien Hodgson. *Distance Education*, Vol. 10(1), 1989, pp. 119-126.

Discusses uses of technology-based learning materials in open and distance learning for adult education and training. Highlights conceptions of the purpose of education; concepts of learning; fundamental values and attitudes of society; and the interrelationship of technology and educational support systems. (ERIC abstract)

33

"Rural Schools Tap into High-Tech Learning." Gregory M. Benson, Jr. and William Hirschen. *PTA Today*, Vol. 13(6), April 1988, pp. 19-21.

Telecommunications technology promises to enhance long-distance learning, especially for rural school students. Teachers and students are now able to communicate via cable, telephone, microwave, and satellite relay. Examples of such networks and how they function are given. (ERIC abstract)

VIDEOCASSETTES

The following is a brief list of videocassettes on educational improvement. Included are sources concerning teacher and administrator professional development and student academic improvement. A more complete list may be found using **A-V Online**, **The Video Source Book**, published by the National Video Clearinghouse, or R.R. Bowker's **Educational Film/Video Locator**.

Class of 2000 (30 minutes)
Maryland Center for Public Broadcasting
11767 Bonita Avenue
Owings Mills, MD 21117
(410) 356-5600

Explores skills students must develop in order to compete outside the classroom by the turn of the century.

Instructional Decisions for Long-term Learning
(180) minutes
Association for Supervision and Curriculum Development
125 N. West Street
Alexandria, VA 22314
(703) 549-9110

Suggests ways teachers can insure their instruction is understood and remembered.

Life Goals: Setting Personal Priorities (30) minutes
Human Relations Media
175 Tompkins Avenue
#V212
Pleasantville, NY 10570-9973
(800) 431-2050

Instruction for students in the importance of early goal-setting to achieve post-graduate success.

Stand and Deliver (105) minutes
Warner Home Video
4000 Warner Boulevard
Burbank, CA 91522
(818) 954-6000
105 minutes

True story of an innovative East-LA math teacher and how he inspired students suffering from poverty and low self esteem to take the Advanced Placement Test in calculus.

Study Skills Video Series
Learning Forum
225 Stevens Avenue
Solana Beach, CA 92075-2097
(619) 755-7056
(800) 527-5321

Program intended to help students better manage their school work load and improve grades. Includes instruction on improving study habits in six problem areas.

Successful Teaching Practices Series
Britannica Films
310 S. Michigan Avenue
Chicago, IL 60604
(312) 347-7958

Collection of 16 instructional tapes on better teaching methods for today's classroom. Includes: "Innovative Teaching for Student Motivation," "Individualizing Instruction Through Contract," "Student Self-Concept," and "A Student Involvement Program for Developing Values."

PERIODICALS

Articles pertaining to rural educational improvement regularly appear in the following periodicals. Included are journals, newsletters, yearbooks and guides on various general and specific aspects of education.

American Education
U.S. Department of Education
400 Maryland Ave., SW
Washington, DC 20202-0001

American Educational Research Journal
American Educational Research Association
1230 17th Street, NW
Washington, DC 20036
(202) 223-9485

American Journal of Education
University of Chicago Press
5720 S. Woodlawn Ave.
Chicago, IL 60637-1603
(312) 702-0694

Basic Education
Council for Basic Education
725 15th St., NW, Suite 1004
Washington, DC 20005-2172
(202) 347-4171

Country Teacher
National Rural Education Association
230 Education Bldg.
Colorado State University
Fort Collins, CO 80523-0001
(303) 491-7022
FAX: (303) 491-1317

Education and Training in Mental Retardation
Council for Exceptional Children
Division on Mental Retardation
1920 Association Dr.
Reston, VA 22091
(703) 620-3660
FAX: (703) 264-9494

Education Funding News
Education Funding Research Council
1611 N. Kent St., Suite 508
Arlington, VA 22209
(703) 528-1000
FAX: (703) 528-6060

Education Grants Alert
Capital Publications, Inc.
1101 King St., Suite 444
Alexandria, VA 22314
(703) 683-4100
FAX: (703) 739-6517

Education Monitor: The Independent Guide to Effective Leadership and School Improvement
Capitol Publications, Inc.
1101 King Street, NE, Suite 444
Alexandria, VA 22314
(703) 683-4100

Educational Horizons
Pi Lambda Theta, Inc.
Box 6626
Bloomington, IN 47407-6626
(812) 339-3462

Educational Media and Technology Yearbook
Association for Educational Communications and Technology
Libraries Unlimited, Inc.
Box 3988
Englewood, CO 80155-3988
(303) 770-1220

Educational Technology: The Magazine for Managers of Change in Education
Educational Technology Publications, Inc.
720 Palisade Ave.
Englewood Cliffs, NJ 07632
(201) 871-4007

Innovator
University of Michigan, School of Education
E and S University Ave.
Ann Arbor, MI 48109
(313) 763-4880

Instruction Delivery Systems
Communicative Technology Corporation
50 Culpepper St.
Warrenton, VA 22186
(703) 349-3169

Issues in Integrative Studies
Association for Integrative Studies
San Francisco University
San Francisco, CA 94132
(415) 338-2982

Rural Information Center Publication Series

Journal of Education Finance
Virginia Tech University
College of Education
Blacksburg, VA 24061
(703) 231-9716

Journal of Cooperative Education
Cooperative Education Associates
3311 Toledo Terrace, Suite A101
Hyattsville, MD 20782
(301) 559-8850

Journal of Research in Rural Education
University of Maine
College of Education
312 Shibles Hall
Orono, ME 04469
(207) 581-2493

Journal of Rural and Small Schools
National Rural Development Institute
National Rural and Small Schools Consortium
359 Miller Hall
Western Washington University
Bellingham, WA 98225
(206) 676-3576

Learning: Creative Ideas and Insights for Teachers
Springhouse Corporation
1111 Bethlehem Pike
Springhouse, PA 19477
(215) 646-8700

Learning Disabilities Quarterly
Council for Learning Disabilities
Box 40303
Overland Park, KS 66204
(913) 492-8755

Mathematics Teacher
National Council of Teachers of Mathematics
1906 Association Dr.
Reston, VA 22091
(703) 620-9840
FAX: (703) 476-2970

Media & Methods: Educational Products, Technologies and Programs for Schools and Universities
Society of Educators
1429 Walnut St.
Philadelphia, PA 19102
(215) 563-3501

National Rural Education News
National Rural Education Association
230 Education Bldg.
Colorado State University
Fort Collins, CO 80523-0001
(303) 491-7022
FAX: (303) 491-1371

New Directions for Teaching and Learning
Jossey-Bass Inc., Publishers
350 Sansome St., Fifth Floor
San Francisco, CA 94104
(415) 433-1767

Partners in Education
National Association of Partners in Education
209 Madison St., Suite 401
Alexandria, VA 22314
(703) 836-4880
FAX: (703) 836-6941

Progressive Teacher
Progressive Publishing Company
2678 Henry St.
Augusta, GA 30904
(404) 868-1691

Reading Teacher
International Reading Association, Inc.
800 Barksdale Rd.
Box 8139
Newark, DE 19714-8139
(302) 731-1600

Resources in Education Annual Cumulation
Education Resources Information Center
Oryx Press
4041 N. Central Ave. at Indian School Rd.
Phoenix, AZ 85012-3399
(602) 265-2651

Rural Educator
National Rural Education Association
230 Education Bldg.
Colorado State University
Fort Collins, CO 80523-0001
(303) 491-7022
FAX: (303) 491-1371

Rural Special Education Quarterly
National Rural Development Institute
American Council on Rural Special Education
Miller Hall 359
Western Washington University
Bellingham, WA 98225
(206) 676-3576

Teaching Exceptional Children
Council for Exceptional Children
1920 Association Dr.
Reston, VA 22091
(703) 620-3660
FAX: (703) 264-9494

ALTERNATIVE INFORMATION SOURCES

Organizations

The following is a selected list of organizations dedicated to advancing the quality of American education. The list is a potpourri of agencies, councils, institutes, foundations and associations, both private and public, with the common goal of developing and promoting excellence in education.

Agency for Instructional Technology
P.O. Box A
Bloomington, IN 47402
(812) 339-2203
(800) 457-4509

Promotes the use of technology in the classroom in order to reinforce instruction. Producer of 31 classroom video series on education-related topics. Involved in the distribution of various other print and technology-based educational resources.

American Forum for Global Education
45 John St., Suite 1200
New York, NY 10038
(212) 732-8606

Aims to prepare U.S. students for challenges of responsible citizenship in a shrinking global environment. Involved in developing educational networks and cooperative projects. Also creates instructional support materials for K-12 students.

Association for Educational Communications and Technology
1025 Vermont Ave., NW, Suite 820
Washington, DC 20005
(202) 347-7834

Supports educational improvement through the application of communications media in the classroom. Also serves as accrediting organization for educational media, and publishes *TechTrends and Educational Technology Research and Development* magazines.

Association for Experiential Education
Box 249-CU
Boulder, CO 80309
(303) 492-1547

Seeks to promote experiential education and to encourage the sharing of ideas, information and materials relevant to experience-based education.

Center for Rural Education and Small Schools
Kansas State University
College of Education
Bluemont Hall
Manhattan, KS 66505
(913) 532-5886

Researchers work with school administrators to improve rural education. Staff conducts surveys, publishes reports, holds staff development workshops and seminars. Currently developing a computer consortium for distributing information on rural education.

Cooperative Education Association
3311 Toledo Ter., Suite A101
Hyattsville, MD 20782
(301) 559-8850

Active in the research, design and promotion of cooperative educational arrangements. Serves as a forum for educators, business and government officials to discuss and develop cooperative programs.

Council for Educational Development and Research
2000 L Street, NW, Suite 601
Washington, DC 20036
(202) 223-1593

Involved in educational research and promoting the belief that research is vital to improving education. Publishes the journal *R&D Preview*.

Council for Exceptional Children
1920 Association Dr.
Reston, VA 22901
(703) 620-3660
FAX: (703) 264-9494

Creative Education Foundation
1050 Union Rd.
Buffalo, NY 14224
(716) 675-3181

Strives to encourage creativity in learning and decision-making. Promotes the concept that education may be improved by providing students with means to creatively respond to problems or challenges. Publishes *Creativity in Action*, *Journal of Creative Behavior*, among others.

Education Funding Research Council
1611 N. Kent St., Suite 508
Arlington, VA 22209
(703) 528-1000

Provides assistance to educators, administrators and community officials in successful fundraising strategies. Publishes *Education Funding News, Guide to Federal Funding for Education* and *Ways to Find Private Sector Funding for Schools.*

Educational Research Service
2000 Clarendon Blvd.
Arlington, VA 22201
(703) 243-2100

Conducts research on issues related to school management and policy. Assists administrators and school boards in decisionmaking by supplying information and statistics from school management studies.

ERIC/CRESS (Clearinghouse on Rural Education and Small Schools)
Appalachia Educational Laboratory
P.O. Box 1348
Charleston, WV 25325
(800) 624-9120

Concerned with the improvement of rural education through the exchange of ideas and distribution of publications focusing on issues in rural development, and education in particular. Collects and disseminates bibliographic information on publications from various national and local sources. Provides access to full-text versions of numerous speeches, conference proceedings, and other otherwise unpublished material.

Folk Education Association of America
4112 38th St., NW
Washington, DC 20016
(202) 362-3603

Volunteer organization promoting folk education ideals and practices, often addressing specific educational needs of rural Americans. The folk education concept embodies a broad range of mostly nontraditional approaches to instruction, emphasizing creativity and promoting cultural awareness through eclectic mixture of activities.

Institute for Educational Research
793 N. Main St.
Glen Ellyn, IL 60137
(312) 858-8060

Involved in program assessment, research on testing, attitudes and needs analysis and promoting the use of technology in elementary and secondary education. Conducts research and applies statistical methods to problem-solving.

Instructional Materials Laboratory
842 W. Goodale Blvd.
Columbus, OH 43212
(614) 221-4950

Concerned with the development of educational materials, primarily for use in vocational programs. Holds seminars and workshops regularly.

John Dewey Society
c/o Dr. Robert C. Morris
Georgia Southern University
Department of Educational Leadership, Research and Technology
Landrum Box 8143
Statesboro, GA 30460
(912) 681-5307

Promotes the concepts of progressive education as understood according to the philosophy of John Dewey. Progressive education seeks receptivity to student needs through interaction with the community and the incorporation of creative and purposeful activity in the classroom.

National Congress for Educational Excellence
11524 E. Ricks Circle
Dallas, TX 75230
(214) 368-3449

Committed to improving American education through a "back-to-basics" approach. Involved in efforts aimed at increasing parental and family control over local schools, and improving student competency in basic skills areas.

National Information Center for Educational Media
P.O. Box 40130
Albuquerque, NM 87196
(505) 265-3591

Established for the purpose of cataloging and storing, in computerized form, information on audiovisual educational materials. "World's largest computer-based index system of audiovisual materials, containing over 500,000 main items in its database." (Encyc. of Assoc. abstract)

National Foundation for the Improvement of Education
1201 16th St., NW
Washington, DC 20036
(202) 822-7840

Seeks to improve learning through better teaching and curriculum design. Affiliated with the National Education Association, this foundation focuses on

creating a school environment that is conducive to better teaching and learning.

National Rural and Small Schools Consortium
c\o National Rural Development Institute
359 Miller Hall
Western Washington University
Bellingham, WA 98225
(206) 676-3576

Works toward improving rural education primarily through promoting cooperative arrangements among school districts and business community. Publishes *Classroom Clips* newsletter on successful rural teaching strategies.

National Rural Education Association (NREA)
c/o Joseph T. Newlin
Colorado State University
Fort Collins, CO 80523-0001
(303) 491-7022
FAX: (303) 491-1371

Functions as an advocate and representative for rural education, seeking to promote discussion, research and policy development regarding the needs of America's rural schools. Publisher of *The Country Teacher, National Rural Education News, Directory of Rural Education Programs and Centers* and *The Rural Educator.*

People United for Rural Education (PURE)
R.R. 3
Alden, IA 50006
(515) 855-4206

Organization composed of individuals, educators and government officials working toward improvement in rural education. Sees rural and urban education as fundamentally different endeavors, requiring distinct approaches. Promotes building on rural education's strengths, including: the freedom to offer more individualized attention, and closer school/community ties.

Regional Educational Laboratories

The U.S. Department of Education conducts research on educational improvement through its 10 Regional Laboratories. Each lab concentrates on developing solutions to problems specific to the education systems within its coverage area.

Regional Labs are major sources of information on various new, alternative and traditional approaches to education. Much of the material published through the Regional Lab system is of strictly rural interest. Program outlines and research results are made available for little or no cost to local schools through regional offices. Listed below are the addresses and telephone numbers of each, along with areas serviced in parentheses.

Appalachia Educational Laboratory
Rural, Small School Program
1031 Quarrier St.
P.O. Box 1348
Charleston, WV 25325
(800) 624-9120 (outside West Virginia)
(800) 344-6646 (in West Virginia)
(Kentucky, Tennessee, Virginia and West Virginia)

Far West Laboratory for Educational Research and Development
1855 Folsom St.
San Francisco, CA 94103
(415) 565-3000
(415) 565-3055 (Center for Autonomous Learning)
(Arizona, California, Nevada and Utah)

Mid-continent Regional Educational Laboratory
2550 South Parker Rd., Suite 500
Aurora, CO 80014
(303) 337-0990
(Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, Wyoming)

North Central Regional Educational Laboratory
295 Emroy Ave.
Elmhurst, IL 60126
(708) 941-7677
(708) 571-4700
(Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Wisconsin)

Northwest Regional Educational Laboratory
101 Southwest Main St., Suite 500
Portland, OR 97204
(800) 547-6339
(503) 275-9500
(Alaska, Idaho, Montana, Oregon, Washington)

Pacific Region Educational Laboratory
1164 Bishop St., Suite 1409
Honolulu, HI 96813
(808) 532-1900
(Hawaii, American Samoa, Guam, the Marshall Islands, the Northern Mariana Islands, Federated States of Micronesia, Republic of Palau)

The Regional Laboratory for Educational Improvement of the Northeast and Islands
300 Brickstone Square, Suite 900
Andover, MA 01810
(800) 347-4200
(800) 877-5400
(508) 470-0098
(Connecticut, Maine, Massachusetts, New Hampshire, New York, Puerto Rico, Rhode Island, Vermont, Virgin Islands)

Research for Better Schools
444 N. Third St.
Philadelphia, PA 19123
(215) 574-9300
(Delaware, Washington, DC, Maryland, New Jersey, Pennsylvania)

Southeastern Regional Vision for Education (SERVE)
Rural Education Program
P.O. Box 5367
Greensboro, NC 27435
(800) 755-3277
(919) 549-8216
(919) 334-3211
(Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina)

Southwest Educational Development Laboratory
211 E Seventh St.
Austin, TX 78701
(512) 476-6861
(Serving Arkansas, Louisiana, New Mexico, Oklahoma, Texas)

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Heartland, IA 56789

Dr. Smith Faculty Ag School

Canadian Journal of Soil Science 1988 v 68(1): 17-27
DeJong, R. Comparison of two soil-water models under semi-arid growing conditions
Ver: AGRICOLA
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NAL CA: 56.8 C162

Auth: C. Johnson CCL Maxcost: $15.00

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